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KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GENERAL EDUCATION AND TRAINING

GRADE 9

NATURAL SCIENCES

MARCH CONTROLLED 2026

TERM 1

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Time: 80 Minutes

Marks: 60

INSTRUCTIONS AND INFORMATION

1. You must answer **all the questions.**
2. Read the instructions carefully and answer questions as instructed.
3. Number your answers exactly as the questions are numbered.
4. Write neatly and legibly.

This question paper consists of 7 **pages** and contains 6 **questions**.

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SECTION A

QUESTION 1

MULTIPLE- CHOICE QUESTIONS

Various options are provided as possible answers to the following questions. Choose the correct answer by circling or placing a cross over the correct letter (A – D).

1.1 The removal of metabolic waste products such as urine, sweat and carbon-dioxide from the body is called… (1)

A Excretion
B Digestion
C Absorption
D Exhalation

1.2 Which process is shown in the diagram below… (1)

A Implantation
B Fertilization
C Ovulation
D Gestation

1.3 Which association is incorrect? (1)

A Excretion – this is the physical manipulation of solid foods which is done first by the tongue and the teeth followed by the swirling and mixing motions of the digestive tract.
B Ingestion – this happens when food is taken into the digestive tract through the mouth.
C Digestion – food is broken down chemically into smaller molecules by enzymes.
D Secretions – this helps with digestion because the accessory organs release water, acids and enzymes.

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1.4 Food moves through the digestive system in the following sequence. (1)

A small intestine → rectum → colon → oesophagus

B oesophagus → stomach → liver → rectum

C oesophagus → stomach → small intestines → colon

D stomach → colon → small intestines → rectum

1.5 This is the control centre of the cell. (1)

A Mitochondria

B Nucleus

C cell membrane

D Vacuole

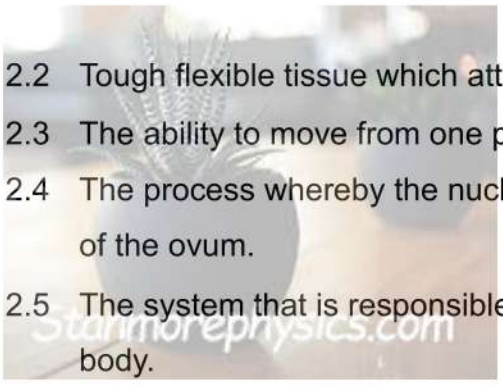
[5]

QUESTION 2

TERMINOLOGY

Give the correct scientific term for each of the following descriptions. Write only the term.

2.1 Organisms that are so small that they can only be seen when using a microscope. (1)



2.2 Tough flexible tissue which attaches bone to bone. (1)

2.3 The ability to move from one place to another. (1)

2.4 The process whereby the nucleus of the sperm cell fuses with the nucleus of the ovum. (1)

2.5 The system that is responsible for the removal of nitrogenous waste from the body. (1)

[5]

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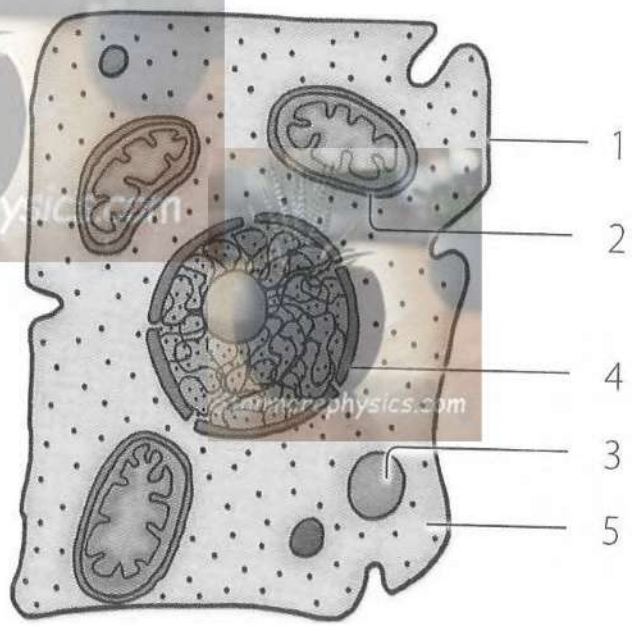
QUESTION 3

CELLS AS THE BASIC UNIT OF LIFE

Study the following structure and answer the questions that follow.



3.1 Provide a suitable caption for the diagram above. (1)

3.2 State the name of the part that is:

a. Responsible to produce energy. (1)

b. Responsible for all chemical reactions in the body. (1)

3.3 The nucleus is responsible for carrying genetic material. List two characteristics/traits of DNA that can be displayed in a human body. (2)

3.4 Explain why animal cells are unable to manufacture/produce their own food? (1)

3.5 Hypothetically, if an animal cell were a factory, it would produce proteins. Explain how proteins would be produced. (4)

[10]

TOTAL SECTION A: [20 MARKS]

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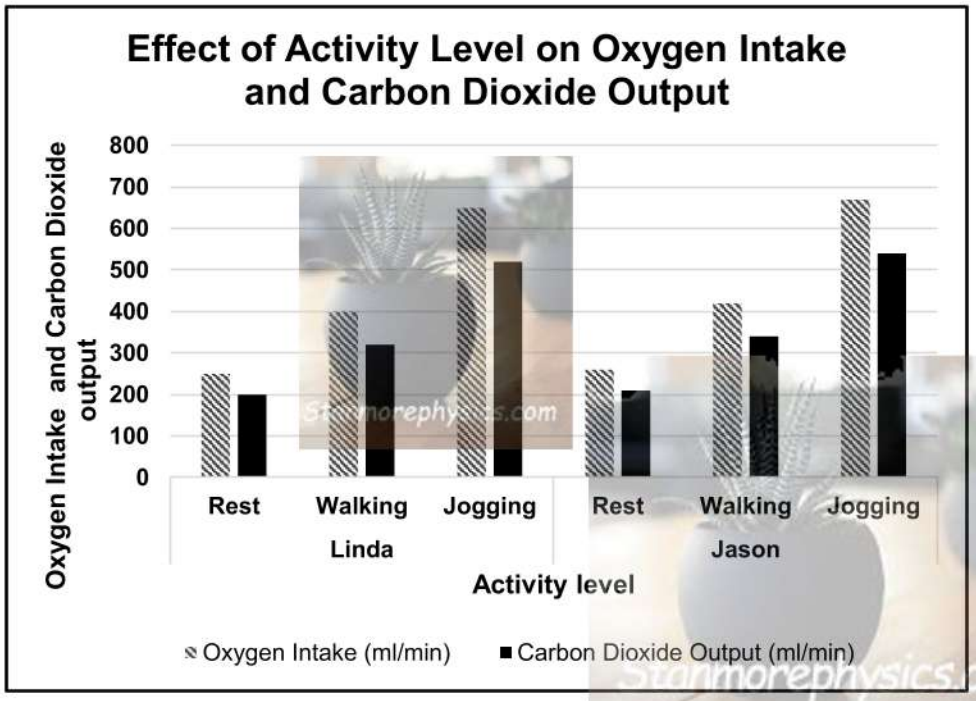
QUESTION 4

CIRCULATORY AND RESPIRATORY SYSTEMS

A study was conducted on 2 grade 9 learners, Linda and Jason, with an aim to measure how their **oxygen intake** (ml per minute) and **carbon dioxide output** (ml per minute) changed at **rest, walking, and jogging**. The results obtained are represented in the graph below. Study the graph and answer questions that follow.



4.1.1 What is the oxygen intake of Linda while walking (1)

4.1.2 How much carbon dioxide did Jason produce at rest? (1)

4.1.3 Which activity level shows the **highest** increase in CO_2 output compared to rest? (1)

4.1.4 Describe the relationship between activity level and oxygen intake for both learners. (2)

4.1.5 Identify the:

a. Independent variable (1)

b. Dependent variable (1)

4.1.6 Calculate the increase in oxygen intake for Linda from rest to jogging. (2)

4.1.7 Why does carbon dioxide output increase as activity level increases? (2)

4.1.7 Predict what might happen to oxygen intake and carbon dioxide output if a new activity, **sprinting**, is introduced, and support your answer. (3)

[14]

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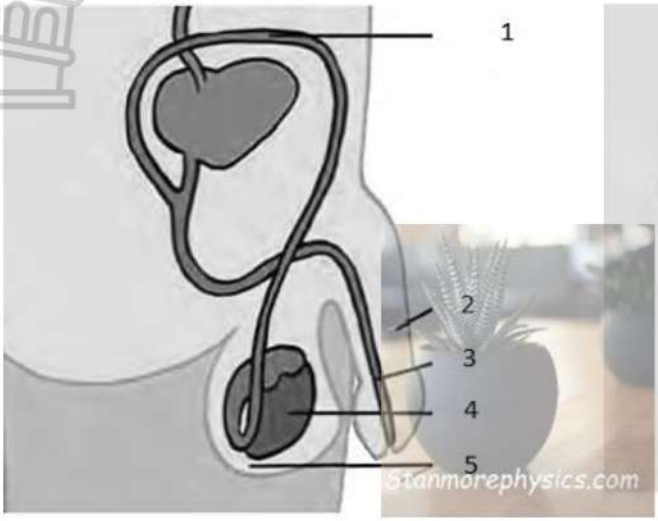
QUESTION 5

HUMAN REPRODUCTION

Study the following structures and answer the questions that follow.



STRUCTURE A **STRUCTURE B**

5.1	Identify structure A and B	(2)
5.2	Label the part marked 2 in Structure A.	(1)
5.3	State the two functions of part 5 in Structure B?	(2)
5.4	What process occurs on day 14 in Structure B?	(1)
5.5	Identify the number and the name of the part that is responsible for the production the testosterone.	(2)
5.6	In which part of Structure B does fertilization occur. Give the name only	(1)
5.7	Explain what would happen if label 1 in Structure A was cut.	(1)
5.8	Explain how can STIs (sexually transmitted infections) affect a person's future fertility?	(2)

[12]

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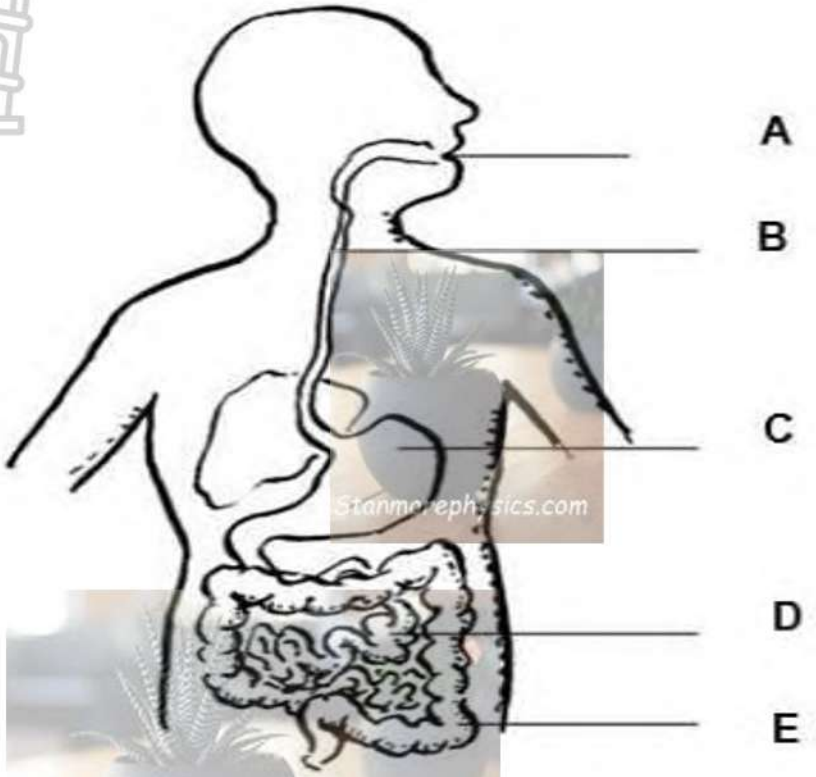
QUESTION 6

THE HUMAN DIGESTIVE SYSTEM

The diagram below shows parts of the alimentary canal. Study the diagram and answer the questions that follow.



7.1	Provide the correct labels for the parts numbered C and E.	(2)
7.2	What is meant by the term egestion?	(2)
7.3	State the process that takes place in parts numbered A, C and E.	(3)
7.4	Explain what happens to the nutrients, from the moment they enter Parts C, D and E until they reach the body cells.	(2)
7.5	Describe both chemical digestion and mechanical digestion	(2)
7.6	Think of the digestive system as a road trip, explain, giving one example what would be the *'traffic jam'* in the system and how would you *'clear it'*	(3)

[14]

TOTAL SECTION B: [40 MARKS]

GRAND TOTAL: 60 MARKS

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PLC CONTROLLED TEST

AMENDED MARKING GUIDELINES

2026 TERM 1

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Marks: 57

NB: These Marking Guidelines consist of **4 pages** and **5 questions** excluding cover page.

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QUESTON 1

1.1 A ✓
1.2 B ✓
1.3 A ✓
1.4 C ✓
1.5 B ✓

[5]

QUESTION 2

2.1 Microscopic organisms / Micro-organisms ✓
2.2 Ligament ✓
2.3 Locomotion ✓
2.4 Fertilisation ✓
2.5 Excretory System ✓

[5]

Question 3

3.1 Animal cell✓ (1)

3.2 (a) Mitochondrion ✓ (1)
(b) Cytoplasm ✓ (1)

3.3 (2)
- Height ✓
- Colour of hair ✓
- Colour of eye ✓
- Blood type ✓

Accept any two (2)

3.4 Animal cells do not have a chloroplast ✓ (1)

3.5 Removed **[6]**

QUESTION 4

4.1.1 400 ml/min ✓ (1)
4.1.2 200 ml/min ✓ (1)
4.1.3 Jogging ✓ (1)

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4.1.4 There is direct relationship (increase)✓ in oxygen intake for both learners and one (same) activity level ✓ (2)

4.1.5 a. Activity level ✓ (1)

b. Oxygen intake✓ /Carbon dioxide output ✓ **(accept any one)** (1)

4.1.6 650 – 250✓ = 400 ml/min ✓ (2)

Accept any answer between a range from 390ml/min to 410ml/min

4.1.7 More glucose is broken down with oxygen to make energy, this then produces more carbon dioxide as a waste product. ✓ ✓ (2)

OR

The breathing rate increases ✓ to expel /release more of CO_2 as the activity level intensifies.✓

4.1.8 Oxygen intake will increase more as muscles need more oxygen for intense energy. Carbon dioxide output will increase more. More glucose is broken down fast, producing lots of carbon dioxide. ✓ ✓ ✓ (3)

OR

Sprinting is high-intensity activity, ✓ so breathing will be very fast (and deep) ✓ to get Oxygen in and carbon dioxide out. ✓

(Accept any correct answer)

[14]

QUESTION 5

5.1 Structure A – male reproductive systems / male reproductive organs.✓ (2)

Structure B – female reproductive systems/ female reporoductive organs. ✓

5.2 Penis ✓ (1)

5.3 a) Inserts the penis during copulation✓ (2)

b) Acts a birth canal during child birth✓

5.4 Ovulation ✓ (1)

5.5 4 ✓ – testis ✓ (2)

5.6 Fallopian tube / oviduct ✓ (1)

5.7 There will be no transportation of sperm cells from the testis to the urethra✓, therefore male cannot reproduce or release sperm cells for fertilisation✓ (2)

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5.8 STIs can cause infections in the reproductive organs✓. If they are not treated they can lead to inflammation and scarring in fallopian tubes in women or epididymis (sperm storage area) in men. ✓

OR

STIs can block sperm movement✓ or affect egg release, impacting fertility. ✓ (Accept any correct answer)

(2)

[13]

QUESTION 6

6.1 C – Stomach ✓ (2)

E – Large intestines ✓

6.2 Egestion – the removal of undigested food and waste material from the body✓✓ (2)

6.3 A – Ingestion ✓ (3)

C – Digestion✓

E – Absorption ✓

6.4 After chemical digestion in the stomach, nutrients are released and are then absorbed by the villi in the small intestines✓. Water, remaining nutrients and other minerals are then absorbed in the large intestines.✓ (2)

6.5 **Chemical digestion** – the breakdown of food using chemical substances called enzymes, and digestive juices✓ (2)

Mechanical digestion – the physical breakdown of food by the teeth through grinding and chewing and contraction of the muscles of the stomach walls✓

6.6 *Traffic jam* can be constipation✓ (food moving too slowly) (3)

How to clear it: Increase fibre intake (like eating more vegetables), drink water, exercise, ✓ ✓ **OR**

T*raffic jam* can be Indigestion✓ (food not breaking down properly)

How to clear it: Take enzymes, eat smaller meals, avoid fatty foods✓✓ **OR**

Traffic jam can be Blockage✓ (like a gallstone)

How to clear it: Medical intervention (treatment or surgery) ✓ ✓

(Accept any correct answer)

[14]

GRAND TOTAL: [57] MARKS